

IN THE CLAIMS:

1. (Currently Amended) A preform with a hollow tubular or approximately tubular shape ~~that simultaneously does not present a revolution axis or a constant thickness~~ for obtaining, after deformation, a personalized orthodontic or dentofacial orthopedic apparatus ~~characterized by a three-dimensional hollow body~~ that can be expanded inside a mold reproducing a the morphology of a subject, wherein said perform has walls and ~~has a shape as close as possible to a predetermined final form of the apparatus~~ a variable thickness and being cut to form an opening.

2 - 3. (Canceled)

4. (Previously Amended) The preform according to claim 1, comprising a thermoplastic or thermosetting plastic material which is deformable through expansion.


5. (Previously Amended) The preform according to claim 4, comprising a thermoplastic material selected from the group consisting of polyethylene, polypropylene, polycarbonate, methyl polymethacrylate, PVC, and polyurethane, or a thermosetting plastic material selected from the group consisting of methyl polymethacrylate and polyurethane.

6. (Previously Amended) The preform according to claim 1, characterized by a surface with guides comprising bumps or recesses intended to guide a technician during cutting operations and/or initial holes for holding fastening hooks of the dentofacial apparatus.

7. (Previously Amended) The preform according to claim 1, comprising a flat, developed shape prior to shaping by a technician.

8. (Currently Amended) The preform according to claim 1, ~~yielding for obtaining,~~
after deformation, a Bonnet's Nighttime Lingual Envelope (N.L.E.), that can be
expanded inside a mold reproducing the morphology of a subject, wherein said preform
has a hollow shape that is cut on the upper anterior part in order to form an opening,
wherein said preform has an area corresponding to the palate and to an area to the
lower part or slide of the N.L.E.

9. (Previously Amended) A process for manufacturing a personalized
orthodontic or dento-facial orthopedic apparatus, comprising:

- 
- a) providing a female mold based at least in part on study models created by a practitioner from a casting or castings made from a subject,
 - b) positioning a preform of claim 1 in the female mold,
 - c) expanding the preform to obtain the apparatus having a desired shape, and
 - d) removing the apparatus from the mold and finishing the apparatus.

10. (Previously Amended) The process according to claim 9, wherein the
expanding step of c) is preformed with heat and the preform is brought to a deformation
temperature of its constitutive material prior to expansion.

11. (Previously Amended) The process according to claim 10, wherein an
expansion temperature is attained by radiation or a heat bearing fluid.

12. (Previously Amended) The process according to claim 11, wherein the
radiation is microwave, ultraviolet or infrared.

13. (Previously Amended) The process according to claim 9, wherein the
expanding step of c) is performed by a method for obtaining an expansion of the
preform to a desired shape.

14. (Previously Amended) The process according to claim 13, comprising expanding by an expansion fluid or mechanically.

15. (Previously Amended) The process according to claim 14, wherein the expansion fluid is compressed air or water.

16. (Previously Amended) The process according to claim 9, wherein the expanding step of c) occurs by inserting an expansion core in the preform and inflating the expansion core with an expansion fluid.

17. (Previously Amended) The process according to claim 16, wherein the expansion core is a controlled expansion core.

18. (Previously Amended) The process according to claim 16, wherein the expansion core comprises a material resistant to an expansion temperature.

19. (Previously Amended) The process according to claim 9, wherein the preform is made of thermosetting material and the expanding step of c) is simultaneously or later accompanied by a step for polymerization of the thermosetting material.

20. (Previously Amended) The process according to claim 9, further comprising inserting fastening pieces or additional pieces during the expanding step of c).

21. (Previously Amended) The process according to claim 9, wherein the finishing step of d) includes at least one of preparing one or more openings, polishing, anchoring of fastening hooks, setting of additional pieces, elimination of useless parts, or reduction of surface areas.

22. (Previously Amended) The process according to claim 21, wherein the finishing step of d) comprises anchoring the fastening hooks to moveable anchoring points on the apparatus.

23. (Previously Amended) The process according to claim 9, wherein the dento-facial orthopedic or orthodontic apparatus obtained by the process of a preceding cycle, is used as the preform.

24. (Previously Amended) The process according to claim 9, wherein the personalized orthodontic or dento-facial orthopedic apparatus is a Bonnet's Nighttime Lingual Envelope (N.L.E.).

25 - 26 (Withdrawn)

27. (Previously Amended) A method of manufacturing a personalized orthodontic or dento-facial orthopedic apparatus, comprising:

- a) providing a female mold based at least in part on study models created by a practitioner from a casting or castings made from a subject,
- b) positioning a preform in the female mold,
- c) expanding the preform with an expansion mechanism so as to obtain an apparatus having a desired shape by displacement of mechanical pieces on the expansion mechanism, and
- d) removing the apparatus from the mold and finishing the apparatus, wherein the perform comprises a three-dimensional hollow body with a form allowing expansion of the preform inside a mold reproducing a morphology of a subject.

28. (Previously Amended) An orthodontic or dento-facial orthopedic apparatus manufactured according to a process comprising :

a) providing a female mold based at least in part on study models created by a practitioner from a casting or casting made from a subject,
b) positioning a preform comprising a thermoplastic material in the female mold,
c) expanding the preform so as to obtain an apparatus having a bent-back segment for inserting the fastening hook, and
d) removing the apparatus from the mold and finishing the apparatus and comprising one or more fastening hook, wherein a fastening hook is inserted into the bent-back segment of the apparatus.

29 - 31. (Canceled)

32. (Previously Amended) The process according to claim 22, wherein the fastening hooks are attached using a fastening mechanism.

33 - 34. (Canceled)

35. (Previously Amended) The process according to claim 18, wherein the material resistant to an expansion temperature is an elastomer.

36. (Canceled)

37. (Previously Amended) The process according to claim 21 wherein the finishing step of d) comprises anchoring the fastening hooks to an orthodontic or dento-facial orthopedic apparatus by means for supplying electrical heating energy and stable positioning of the fastening hook for anchoring to the apparatus.

38. (Previously Amended) The process according to claim 37 wherein the electrical energy is supplied by a hand-held, portable current generator.

39. (Previously Amended) The process according to claim 37 wherein the stable mechanical positioning is performed with the distal ends of electrical conductors having

a clamp shape, and the distal ends are adapted to the diameter of a wire or to a shape of the hook to be inserted.

40. (Previously Amended) The process according to claim 37 wherein the electrical energy is supplied by a gun that mechanically holds a pair of rigid electrical conductors connected by flexible conductors to a fixed generator.

41 - 42. (Canceled)
